FACT SHEET FOR STATE WASTE DISCHARGE PERMIT ST-5391

Radar Hills Sewer System

SUMMARY

Agape Ministries, a non-profit organization owns and operates Othello Heights, a portion of the old vacant radar facility, and the wastewater lagoons. The total resident population for the Radar Hills Sewer System is 126 persons.

Wastewater from 27 homes in Othello Heights and a double wide mobile home flows by gravity to one lagoon (#2) of a three lagoon system. All three lagoons were clay lined in 1971, but the liners are no longer intact. Lagoon #2 was lined with 20 mil PVC liner and covered with 12 inches of soil in 1987. The PVC liner in lagoon #2 is believed to be compromised as well. Treatment is currently by rapid infiltration. At this time, the Permittee may only discharge to lagoon #2.

Due to a lack of background information, the proposed permit will require two years of influent and effluent monitoring. This monitoring will establish the amount of water entering the lagoon #2, any inflow and infiltration and to establish a wastewater characterization. Upon completion of the monitoring, the Department shall determine the next course of action regarding maintenance and upgrades to the system. This data will be used to write a compliance schedule for the next permit cycle.

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INTRODUCTION

This fact sheet is a companion document to the draft State Waste Discharge Permit No. ST-5391. The Department of Ecology (the Department) is proposing to issue this permit, which will allow discharge of wastewater to waters of the State of Washington. This fact sheet explains the nature of the proposed discharge, the Department's decisions on limiting the pollutants in the wastewater, and the regulatory and technical bases for those decisions.

Washington State law (RCW 90.48.080 and 90.48.162) requires that a permit be issued before discharge of wastewater to waters of the state is allowed. Regulations adopted by the State include procedures for issuing permits (Chapter 173-216 WAC), technical criteria for discharges from municipal wastewater treatment facilities (Chapter 173-221 WAC) and water quality criteria for ground waters (Chapter 173-200 WAC). They also establish the basis for effluent limitations and other requirements which are to be included in the permit.

This fact sheet and draft permit are available for review by interested persons as described in Appendix A--Public Involvement Information.

The fact sheet and draft permit have been reviewed by the Permittee. Errors and omissions identified in these reviews have been corrected before going to public notice. After the public comment period has closed, the Department will summarize the substantive comments and the response to each comment. The summary and response to comments will become part of the file on the permit and parties submitting comments will receive a copy of the Department's response. The fact sheet will not be revised. Changes to the permit will be addressed in Appendix D--Response to Comments.

GENERAL INFORMATION	
Applicant	Agape Ministries, Inc.
Facility Name and Address	Radar Hills Sewer System, 9111 Sagehill Road, Othello, WA 99344
Type of Treatment System:	POTW three-cell facultative lagoon system, one with 20 mil PVC liner covered with 12” loose depth imported sandy soil.
Discharge Location	Latitude: 46° 43' 15" N Longitude: 119° 09' 34" W.
Legal Description of Application Area	N½ NE¼ of Section 10, T. 14N., R. 29 E.W.M. Latitude: 46° 43' 15" N Longitude: 119° 09' 34" W.
Contact at Facility	Name: Donald Butcher Telephone #: (509) 448-2136
Responsible Official	Name: Donald Butcher Title: Manager/Owner Address: 852 South McKinney Road, Othello WA 99344 Telephone #: (509) 448-2136 FAX #: (509) 448-2136

BACKGROUND INFORMATION

This facility was first permitted in 1996. Throughout the history of the permit, the Permittee has not remained in compliance regarding submittal of Discharge Monitoring Reports, required reports, and facility maintenance. The collection and treatment system is very old (1950's) and the information contained within this fact sheet has been taken from an old 1985 and 1986 Sewage Facility Plan. These plans are somewhat vague but were all of the data available to write the fact sheet and permit.

DESCRIPTION OF THE COLLECTION AND TREATMENT SYSTEM

HISTORY

The Radar Hills Sewer System is located in Franklin County about 105 miles southwest of Spokane and six miles south of Othello in Adams County (Figure 1). The community is situated on the highest elevation of an escarpment which slopes gradually to the south and drops off sharply toward the northern boundary of the Adams County line one mile to the north.

The original development, Othello Air Force Station was constructed during the early 1950's. Over the years the site has had several owners. Current ownership of the old radar facility is divided by a road that separates the base into a northern and southern half. The northern half is owned by Smith Brothers Ox Ranch Incorporated. The southern half is owned by Agape Ministries Incorporated, a non-profit organization (Figure 2). Agape Ministries also owns the old family housing area which is now called Othello Heights and contains 27 homes (Figure 2).

Sewage treatment from 1950 to 1955 was by septic tanks and drainfields on site. In 1955, a gravity sewer line was constructed to connect the septic tank systems to a natural basin where the existing lagoons are now located. In 1958, an additional eighteen units of family housing was constructed and connected to the gravity sewage collection system. In 1971, three lagoons were created within this natural basin (1985, Hickerson and Associates). Lagoon #2 was lined in 1987 with a 20 mil PVC liner and covered with 12 inches of soil. Lagoon #2 has a surface area of approximately 0.74 acres (Figure 3).

The terrain surrounding the lagoons is steeply sloped and covered with wild non-irrigated vegetation. The elevation at the lagoon site is about 930 feet above MSL which is 300 feet lower than the development area (1985, Hickerson and Associates). Climatological data for the Othello area is shown in the following table (Western Regional Climate Center, 2006).

Period	Mean Temperature	Daily Temperature Frequencies		Mean Precipitation (Inches)
1941-2002	Monthly avg. ° F	90 ° F & above	32 ° F & Below	
Jan	28.9	0	26	1.02
Feb	35.8	0	21	0.82
Mar	42.7	0	18	0.69

Period	Mean Temperature	Daily Temperature Frequencies		Mean Precipitation (Inches)
1941-2002	Monthly avg. º F	90 º F & above	32 º F & Below	
Apr	49.8	0	9	0.59
May	57.7	1	2	0.70
Jun	64.5	4	0	0.64
Jul	71.1	14	0	0.29
Aug	70.0	11	0	0.24
Sep	61.9	3	1	0.40
Oct	50.4	0	8	0.64
Nov	38.4	0	19	1.02
Dec	30.6	0	26	1.11
Total Avg.	**50.2**	**32**	**129**	**8.16**

COLLECTION SYSTEM STATUS

The status of the collection system is unknown. Influent flows to the lagoons have not been consistently reported to Ecology to allow estimations of per capita discharge or Infiltration and Inflow.

TREATMENT PROCESSES

The non-aerated lagoons that service Radar Hills are approximately ½ mile to the east of the Othello Heights housing area (Figure 1). Currently, and for a number of years, wastewater from the old radar facility and Othello Heights enters lagoon #2. When the lagoon was lined in 1987, treatment was by evaporation. The existing level of treatment of the wastewater is unknown due to the absence of influent and lagoon testing. The integrity of the near 20-year old PVC liner is unknown, but believed to be compromised. A site visit on December 3, 2004, showed that lagoon #2 had a large amount of vegetation growing in the lagoon. The compacted clay liners in the lagoons are no longer intact (Hickerson and Associates, 1986). At this time only lagoon #2 should be used as it is in the best condition compared to the other two.

Othello Heights (Figure 2), the housing complex located outside the old radar facility consists of 27 units with a population of 120 people. West of Othello Heights there is a doublewide mobile home with six people living in it bringing the total permanent resident population that the system services to 126 people (Spink Engineering, 2005). At this time, no one is occupying the old radar facility according to Jerry Lingo, the Franklin County Code Enforcement officer, even though there are three apartment living areas and an office with a restroom located there. The permit manager was informed that these facilities on the old radar facility do not meet local building code requirements for living quarters (2006, Lingo).

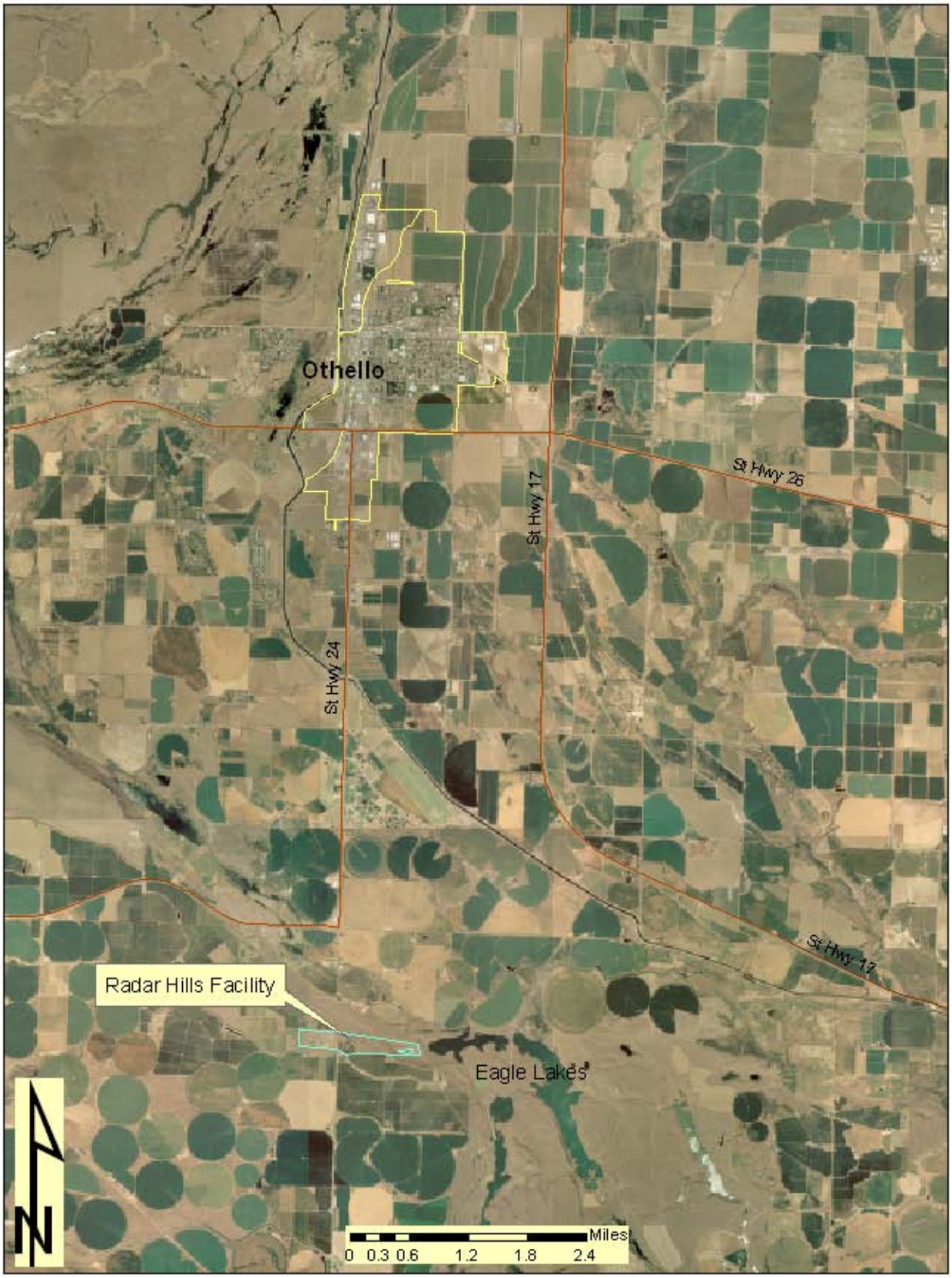

Figure 1. General Location of Radar Hills

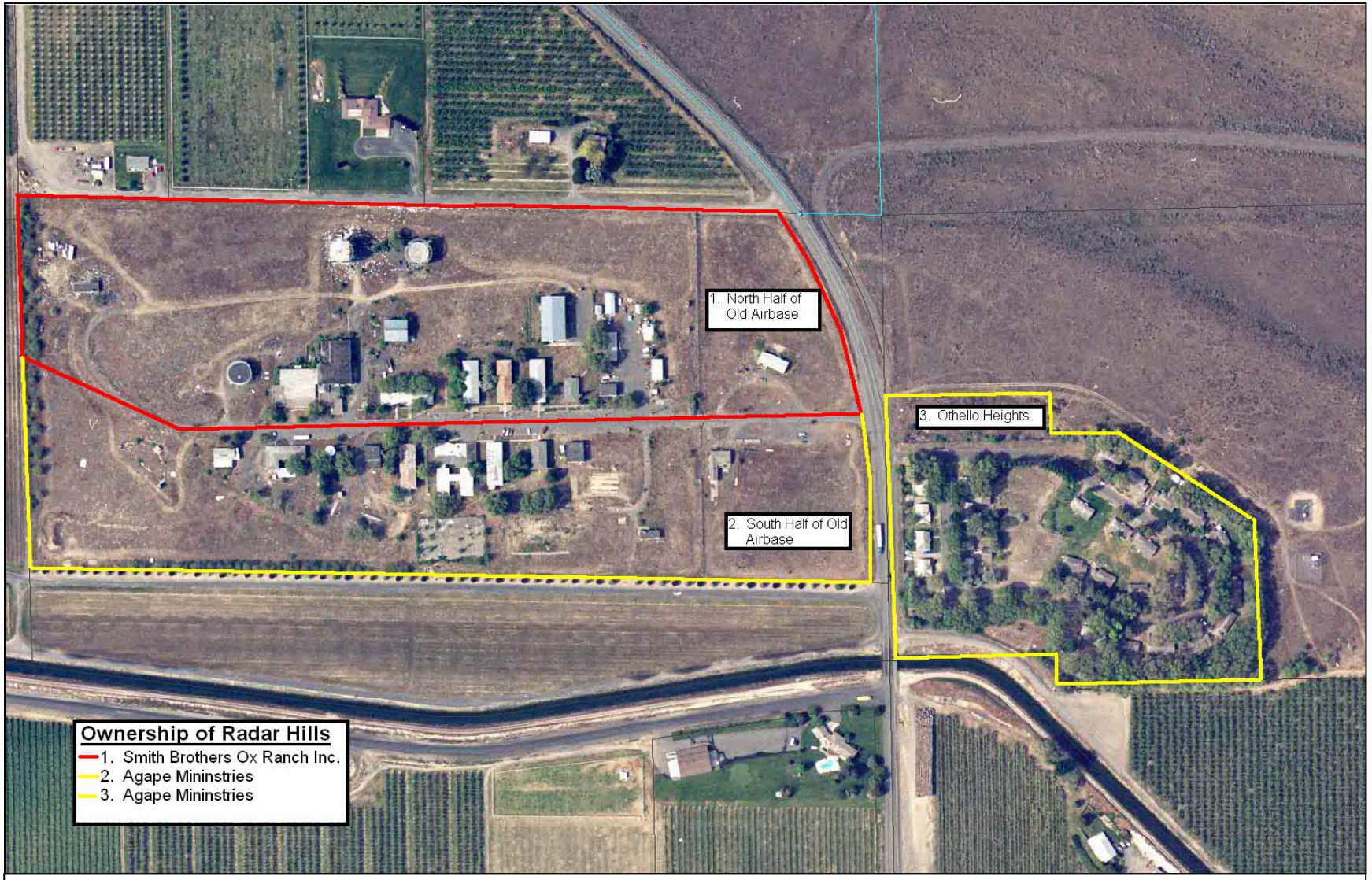

Figure 2. Ownership of Radar Hills Facility

Figure 3. Lagoons 1, 2, and 3 owned by Agape Ministries

In 1985 a sewage facility plan was submitted to Ecology (Hickerson and Associates). A supplement to the plan was submitted to Ecology in 1986 (Hickerson and Associates). Both plans were approved by Ecology on May 7, 1987. The supplement plan assumed a design flow volume of 12,302 gallons per day (gpd) for lagoon #2. According to the Criteria for Sewage Works Design (Ecology, 1998), the design flow for dwellings is 100 gpd per person. With the current population of 126 persons, flow could be estimated at 12,600 gpd. Since there is no flow meter installed at the current system, wastewater flows were estimated to be equivalent to winter water usage rates that were reported in the discharge permit application submitted to Ecology in June 2004. Water pumped from the well was recorded in 2003 for 27 days (November 25th through December 22) resulting in an estimated wastewater flow of approximately 8,500 gpd.

Percolation rate was also estimated in the 1986 facility plan. Two test holes were dug in the bottom of lagoon #3. Hole #1 was 12 inches in diameter by 12 inches deep. Hole #2 was 10 inches in diameter by 52 inches deep. Both were filled and maintained in a saturated state for 12 hours prior to testing. The test results were as follows:

- Hole #1 = 1 inch water drop/ 8 minutes
- Hole #2 = 1 inch water drop/4 minutes
- Average Percolate Rate = 11.25 inches/hour (classified as rapid)

According to the rapid percolation rates and the assumption that the almost 20 year old liner has been compromised, wastewater from the housing area is receiving little to no treatment, and there is a potential for impacts to the ground water.

RESIDUAL SOLIDS

It is unknown if the facility generates enough biosolids to remove or any incidental solids (rags, scum, and other debris) as part of the routine maintenance of the equipment.

GROUND WATER

No groundwater information was collected or reported in the 1985 or 1986 Sewage Facility Plan. There are no ground water monitoring wells upgradient or downgradient of the lagoons. Several privately owned domestic wells are located within one to two miles upgradient, but there are no records of any water quality monitoring.

Well logs were submitted with the permit application along with a map. Locations of the wells are shown in Figure 4. Well F 426 is the only well within ½ mile of the lagoon that is also located within the natural drainage basin. According to the water well report that was submitted with the permit application for well F 426, the static water level was 50 feet below the top of the well. The land surface elevation above MSL was 900 feet. The well log estimated the first five feet to be sand, 5 to 40 feet to be sand and gravel, and 40 to 100 feet dark grey broken basalt. In the general area, the well logs estimated that loosely consolidated sediment overlies broken basalt. The depths of this loosely consolidated material varied from 6 to 40 feet with broken basalt material varying anywhere from 6 to 147 feet. The lagoons are located in a natural drainage area that is less than a ¼ mile away from Eagle Lakes (Figure 4). The lagoons are at an elevation of 930 feet which is 107 feet above the water level of the northwest end of the lake. In looking at the topography of the region, there are a series of small lakes and ponds that appear to flow from the northwest to the southeast.

Figure 4. Domestic Wells in the Vacinity of Radar Hills

PERMIT STATUS

The previous permit for this facility was issued on June 5, 2000. An inspection was conducted on December 3, 2004 so that Ecology's new permit manager could meet the facility manager, review the status of the facility, inspect the lagoons and get a better idea of what long term goals the Permittee wished to achieve.

Upon inspection, the lagoons were found to be heavily vegetated and appeared to have not been maintained. Currently, only lagoon #2 is in use. The facility manager indicated that the goal of Agape Ministries is to continue renting the 27 units in Othello Heights and eventually get the old radar facility up and running again.

An application for permit renewal was submitted to the Department on June 29, 2004 and accepted by the Department on July 30, 2004.

SUMMARY OF COMPLIANCE WITH THE PREVIOUS PERMIT

During the history of the previous permit, the Permittee has not remained in compliance. They have never submitted a Discharge Monitoring Report, never installed a flow meter, nor have they ever submitted any written reports, as required in their previous or last permits.

WASTEWATER CHARACTERIZATION

Some effluent data was reported in the permit application. Samples were collected from the "far end of lagoon #2". The samples were taken on March 3, 2000 and July 26, 2000. The information presented in the application is as follows:

Table 1: Wastewater Characterization

Parameter	Concentration			Number of Analyses
	Minimum	Maximum	Average	
BOD (5 day)	<72	<360	216±	2
Total Suspended Solids	104	630	367	2
Conductivity	1,152	2673	1,192.5	2
Nitrate + Nitrite-N	0.12	0.82	0.47	2
Total Kjeldahl N	29.2	40.4	35.6	3
pH	7.2	NA	NA	1

Upon examining the results of BOD and contacting the labs that analyzed the sample, the values that were reported are questionable due to improper dilutions made by the testing labs. Characterization of the wastewater is difficult to do with so few samples collected.

PROPOSED PERMIT LIMITATIONS

State regulations require that limitations set forth in a waste discharge permit must be either technology- or water quality-based. Wastewater must be treated using all known, available, and reasonable treatment (AKART) and not pollute the waters of the State. The minimum requirements to demonstrate compliance with the AKART standard are derived from the *Water*

Reclamation and Reuse Standards, the *Design Criteria for Municipal Wastewater Land Treatment*, and Chapter 173-221 WAC.

The approved engineering report includes specific design criteria for this facility. Water quality-based limitations are based upon compliance with the Ground Water Quality Standards (Chapter 173-200 WAC).

The more stringent of the water quality-based or technology-based limits are applied to each of the parameters of concern. These limits are described in more detail below.

TECHNOLOGY-BASED EFFLUENT LIMITATIONS

All waste discharge permits issued by the Department must specify conditions requiring available and reasonable methods of prevention, control, and treatment of discharges to waters of the state (WAC 173-216-110). AKART for evaporation lagoons has not been defined by regulation, but according to the state's water pollution law it is unlawful to cause or allow pollution to seep into waters of the state; RCW 90.48.080. To meet this requirement and protect the ground water, Ecology requires that impoundments must be constructed and operated in one of two ways:

1. Double lined with a leak detection system, or
2. Single lined (60 mil HDPE) with ground water monitoring up- and downgradient of the impoundment.

For existing pond systems that do not meet these requirements, Ecology has generally not required that they be retrofitted unless some activity disrupts the integrity of the lagoon's bottom surface; e.g., solids removal. Existing lagoons not having to meet the liner requirements does not absolve the Permittee/operator from having to meet the regulatory (WAC 173-216-110) and permit requirements to properly operate and maintain the facility at all times. Site visits indicated that the current system has not been properly maintained and operated. The1986 Sewage Facility Plan (Hickerson & Associates) stated that the clay liners had been compromised.

In addition to providing treatment, AKART includes the requirement to prevent and control pollution of waters of the state; RCW 90.48.010. To achieve these requirements and meet the need to properly operate and maintain the facility, the permit will require the following:

1. The installation of a flow metering system to measure the flow into lagoon #2.
2. Submit monthly Discharge Monitoring Reports as required by the permit.
3. Report all flow measurement and wastewater testing requirements as required by the permit, and
4. No wastewater shall be allowed to be discharged into lagoon #1 or #3.

Changes in the sampling, testing, and reporting requirements will be made in response to conclusions and recommendations submitted by the Permittee in the Discharge Monitoring Reports.

It will be determined during the development of the next permit if sufficient information is available to require the Permittee to submit an engineering report. This engineering report, if required, shall demonstrate that the system protects ground water according to AKART.

GROUND WATER QUALITY-BASED EFFLUENT LIMITATIONS

In order to protect existing water quality and preserve the designated beneficial uses of Washington's ground waters including the protection of human health, WAC 173-200-100 states that waste discharge permits shall be conditioned in such a manner as to authorize only activities that will not cause violations of the Ground Water Quality Standards. Drinking water is the beneficial use generally requiring the highest quality of ground water. Providing protection to the level of drinking water standards will protect a great variety of existing and future beneficial uses.

Applicable ground water criteria as defined in Chapter 173-200 WAC and in RCW 90.48.520 for this discharge include the following:

Table 2: Ground Water Quality Criteria

Total Coliform Bacteria	1 Colony/ 100 mL
Total Dissolved Solids	500 mg/L
Nitrate	10 mg/L
pH	6.5 to 8.5 standard units
Toxics	No toxics in toxic amounts

The Permittee has not provided any ground water information for the lagoon site and there is no ground water data available to determine if the background ground water quality is either higher or lower than the criteria given in Chapter 173-200 WAC.

In lieu of preparing a Hydrogeologic Study, the Permittee will monitor the facility for two years. After the monitoring data has been gathered and analyzed, actions will be taken during the next permit cycle regarding a Hydrogeologic Study.

COMPARISON OF LIMITATIONS WITH THE EXISTING PERMIT ISSUED JUNE 5, 2000

Table 3: Comparison of Previous and New Limits

Parameter	Existing Limits	Proposed Limits*
Monthly average flow (lagoon #2 only):	6,800 gpd	12,302 gpd
BOD influent loading (lagoon #2 only):	none	25.9 lbs/day

* The proposed limits were taken from the 1985 and 1986 Sewage Facility Plan from Hickerson and Associates for lagoon #2 only.

The existing limits were based on a population estimate of 68 persons, allowing 100 gallons per person per day. The proposed limit for flow was increased from 6,800 gpd to 12,302 gpd based on the design criteria of lagoon #2.

MONITORING REQUIREMENTS

Monitoring, recording, and reporting are specified to verify that the treatment process is functioning correctly, that ground water criteria are not violated, and that effluent limitations are being achieved (WAC 173-216-110).

INFLUENT AND EFFLUENT MONITORING

The monitoring and testing schedule is detailed in the proposed permit under Condition S2. Specified monitoring frequencies take into account the quantity and variability of the discharge, the treatment method, past compliance, significance of pollutants, and cost of monitoring.

Monitoring for biological oxygen demand, total suspended solids, fixed dissolved solids, fecal coliform, pH, and Nitrogen is being required to further characterize the influent and lagoon. These pollutant(s) could have a significant impact on the quality of the ground water.

The influent samples shall be taken from the distribution box discharging to lagoon #2. The lagoon samples shall be collected at a location that best represents the water within the lagoon.

FRESHWATER MONITORING

The permit will require the monthly reporting of the total amount of freshwater pumped from the onsite well. This information along with the wastewater flow values can be used to estimate Inflow/Infiltration to the system.

OTHER PERMIT CONDITIONS

REPORTING AND RECORDKEEPING

The conditions of S3 are based on the authority to specify any appropriate reporting and recordkeeping requirements to prevent and control waste discharges (WAC 173-216-110).

FACILITY LOADING

The design criteria for this treatment facility are taken from the 1986 Supplement Sewage Facility Plan (lagoon #2 only) prepared by Hickerson & Associates and are as follows:

Daily Flow (lagoon #2 only):	12,302 gpd
BOD influent loading (lagoon #2 only):	25.9 lbs/day

The permit requires the Permittee to maintain adequate capacity to treat the flows and waste loading to the treatment plant (WAC 173-216-110[4]). The Permittee is required to submit an engineering report when the plant reaches 85% of its flow or loading capacity. For significant new discharges, the permit requires a new application and an engineering report (WAC 173-216-110[5]).

OPERATIONS AND MAINTENANCE

The proposed permit contains condition S.5. as authorized under RCW 90.48.110, WAC 173-220-150, Chapter 173-230 WAC, and WAC 173-240-080. It is included to ensure proper operation and regular maintenance of equipment, and to ensure that adequate safeguards are taken so that constructed facilities are used to their optimum potential in terms of pollutant capture and treatment.

In lieu of preparing an Operation and Maintenance manual, the Permittee will monitor the facility for two years. Plans for how the facility should be operated will be discussed after the monitoring data has been gathered and analyzed.

Section S1 of the permit will prohibit the discharge of any wastewater into lagoon #1 and #3, based on the condition of these two lagoons.

Section S5 of the permit will require the Permittee to install a flow monitoring system that will continuously monitor the flow of wastewater to lagoon #2. The Permittee will be required to submit to Ecology a plan that will identify the type and manufacturer of metering system, its location, and a time for its installation and on-line operation. The system shall be operational no later than March 1, 2007. Ecology offers its assistance in the preparation of this plan.

RESIDUAL SOLIDS HANDLING

To prevent water pollution the Permittee is required in permit condition S6. to store and handle all residual solids (grit, screenings, scum, sludge, and other solid waste) in accordance with the requirements of RCW 90.48.080 and State Water Quality Standards.

The disposal of solid wastes associated with the treatment system is under the jurisdiction of the local health district.

PRETREATMENT

WAC 173-216-110 requires that the list of prohibitions in WAC 173-216-060 be included in the permit.

GENERAL CONDITIONS

General Conditions are based directly on state laws and regulations and have been standardized for all industrial waste discharge to ground water permits issued by the Department.

Condition G1 requires responsible officials or their designated representatives to sign submittals to the Department. Condition G2 requires the Permittee to allow the Department to access the treatment system, production facility, and records related to the permit. Condition G3 specifies conditions for modifying, suspending or terminating the permit. Condition G4 requires the Permittee to apply to the Department prior to increasing or varying the discharge from the levels stated in the permit application. Condition G5 requires the Permittee to submit written notice of significant increases in the amount or nature of discharges (typically new industrial discharges) into the sewer system tributary to the permitted facility. Condition G6 requires the Permittee to construct, modify, and operate the permitted facility in accordance with approved engineering documents. Condition G7 prohibits the Permittee from using the permit as a basis for violating

any laws, statutes or regulations. Condition G8 requires application for permit renewal 60 days prior to the expiration of the permit. Condition G9 requires the payment of permit fees. Condition G10 describes the penalties for violating permit conditions.

RECOMMENDATION FOR PERMIT ISSUANCE

This proposed permit meets all statutory requirements for authorizing a wastewater discharge, including those limitations and conditions believed necessary to control toxics, and to protect human health and the beneficial uses of waters of the State of Washington. The Department proposes that the permit be issued for three years to establish baseline monitoring to determine if permit limits are adequate.

REFERENCES FOR TEXT AND APPENDICES

Hickerson & Associates, January, 1985. Radar Hill PUD Sewage Facility Plan, 18 pp.

Hickerson & Associates, June, 1986. Radar Hill PUD Sewage Facility Plan Supplement – June 1986, 9 pp.

Lingo, J., Franklin County Code Enforcement, personal contact by Marcie Mangold. 2006.

Washington State Department of Ecology and Department of Health, 1997. Water Reclamation and Reuse Standards, Ecology Publication # 97-23. 73 pp.

Washington State Department of Ecology.

Laws and Regulations(http://www.ecy.wa.gov/laws-rules/index.html)

Permit and Wastewater Related Information (http://www.ecy.wa.gov/programs/wq/wastewater/index.html)

Washington State Department of Ecology, 1996. Implementation Guidance for the Ground Water Quality Standards, Ecology Publication # 96-02.

APPENDICIES

APPENDIX A--PUBLIC INVOLVEMENT INFORMATION

The Department has tentatively determined to reissue a permit to the applicant listed on page one of this fact sheet. The permit contains conditions and effluent limitations which are described in the rest of this fact sheet.

Public notice of application was published on October 27, 2005 and November 3, 2005 in the Othello Outlook to inform the public that an application had been submitted and to invite comment on the reissuance of this permit.

The Department published a Public Notice of Draft (PNOD) on December 8, 2005 and because of additional revisions, will publish a second PNOD on April 13, 2006 in the Othello Outlook to inform the public that a draft permit and fact sheet are available for review. Interested persons are invited to submit written comments regarding the draft permit. The draft permit, fact sheet, and related documents are available for inspection and copying between the hours of 8:00 a.m. and 5:00 p.m. weekdays, by appointment, at the regional office listed below. Written comments should be mailed to:

Water Quality Permit Coordinator
Department of Ecology
Eastern Regional Office
4601 North Monroe Street
Spokane, Washington 99205-1295

Any interested party may comment on the draft permit or request a public hearing on this draft permit within the thirty (30) day comment period to the address above. The request for a hearing shall indicate the interest of the party and reasons why the hearing is warranted. The Department will hold a hearing if it determines there is a significant public interest in the draft permit (WAC 173-216-100). Public notice regarding any hearing will be circulated at least thirty (30) days in advance of the hearing. People expressing an interest in this permit will be mailed an individual notice of hearing.

Comments should reference specific text followed by proposed modification or concern when possible. Comments may address technical issues, accuracy and completeness of information, the scope of the facility's proposed coverage, adequacy of environmental protection, permit conditions, or any other concern that would result from issuance of this permit.

The Department will consider all comments received within thirty (30) days from the date of public notice of draft indicated above, in formulating a final determination to issue, revise, or deny the permit. The Department's response to all significant comments is available upon request and will be mailed directly to people expressing an interest in this permit.

Further information may be obtained from the Department by telephone, (509) 329-3400, or by writing to the address listed above.

This permit was written by Marcie Mangold.

APPENDIX B--GLOSSARY

Ambient Water Quality--The existing environmental condition of the water in a receiving water body.

Ammonia--Ammonia is produced by the breakdown of nitrogenous materials in wastewater. Ammonia is toxic to aquatic organisms, exerts an oxygen demand, and contributes to eutrophication. It also increases the amount of chlorine needed to disinfect wastewater.

Average Monthly Discharge Limitation--The average of the measured values obtained over a calendar month's time.

BOD_5--Determining the Biochemical Oxygen Demand of an effluent is an indirect way of measuring the quantity of organic material present in an effluent that is utilized by bacteria. The BOD_5 is used in modeling to measure the reduction of dissolved oxygen in a receiving water after effluent is discharged. Stress caused by reduced dissolved oxygen levels makes organisms less competitive and less able to sustain their species in the aquatic environment. Although BOD is not a specific compound, it is defined as a conventional pollutant under the federal Clean Water Act.

Bypass--The intentional diversion of waste streams from any portion of the collection or treatment facility.

Compliance Inspection - Without Sampling--A site visit for the purpose of determining the compliance of a facility with the terms and conditions of its permit or with applicable statutes and regulations.

Compliance Inspection - With Sampling--A site visit to accomplish the purpose of a Compliance Inspection - Without Sampling and as a minimum, sampling and analysis for all parameters with limits in the permit to ascertain compliance with those limits; and, for municipal facilities, sampling of influent to ascertain compliance with the 85 percent removal requirement. Additional sampling may be conducted.

Composite Sample--A mixture of grab samples collected at the same sampling point at different times, formed either by continuous sampling or by mixing discrete samples. May be "time-composite"(collected at constant time intervals) or "flow-proportional" (collected either as a constant sample volume at time intervals proportional to stream flow, or collected by increasing the volume of each aliquot as the flow increased while maintaining a constant time interval between the aliquots.

Construction Activity--Clearing, grading, excavation and any other activity which disturbs the surface of the land. Such activities may include road building, construction of residential houses, office buildings, or industrial buildings, and demolition activity.

Continuous Monitoring –Uninterrupted, unless otherwise noted in the permit.

Engineering Report--A document, signed by a professional licensed engineer, which thoroughly examines the engineering and administrative aspects of a particular domestic or

industrial wastewater facility. The report shall contain the appropriate information required in WAC 173-240-060 or 173-240-130.

Fecal Coliform Bacteria--Fecal coliform bacteria are used as indicators of pathogenic bacteria in the effluent that are harmful to humans. Pathogenic bacteria in wastewater discharges are controlled by disinfecting the wastewater. The presence of high numbers of fecal coliform bacteria in a water body can indicate the recent release of untreated wastewater and/or the presence of animal feces.

Grab Sample--A single sample or measurement taken at a specific time or over as short period of time as is feasible.

Industrial Wastewater--Water or liquid-carried waste from industrial or commercial processes, as distinct from domestic wastewater. These wastes may result from any process or activity of industry, manufacture, trade or business, from the development of any natural resource, or from animal operations such as feed lots, poultry houses, or dairies. The term includes contaminated storm water and, also, leachate from solid waste facilities.

Maximum Daily Discharge Limitation--The highest allowable daily discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. The daily discharge is calculated as the average measurement of the pollutant over the day.

Method Detection Level (MDL)--The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is above zero and is determined from analysis of a sample in a given matrix containing the analyte.

pH--The pH of a liquid measures its acidity or alkalinity. A pH of 7 is defined as neutral, and large variations above or below this value are considered harmful to most aquatic life.

Quantitation Level (QL)-- A calculated value five times the MDL (method detection level).

State Waters--Lakes, rivers, ponds, streams, inland waters, underground waters, salt waters, and all other surface waters and watercourses within the jurisdiction of the state of Washington.

Stormwater--That portion of precipitation that does not naturally percolate into the ground or evaporate, but flows via overland flow, interflow, pipes, and other features of a storm water drainage system into a defined surface water body, or a constructed infiltration facility.

Technology-based Effluent Limit--A permit limit that is based on the ability of a treatment method to reduce the pollutant.

Total Coliform Bacteria--A microbiological test which detects and enumerates the total coliform group of bacteria in water samples.

Total Dissolved Solids--That portion of total solids in water or wastewater that passes through a specific filter.

Total Suspended Solids (TSS)--Total suspended solids is the particulate material in an effluent. Large quantities of TSS discharged to a receiving water may result in solids accumulation. Apart from any toxic effects attributable to substances leached out by water, suspended solids may kill

fish, shellfish, and other aquatic organisms by causing abrasive injuries and by clogging the gills and respiratory passages of various aquatic fauna. Indirectly, suspended solids can screen out light and can promote and maintain the development of noxious conditions through oxygen depletion.

Water Quality-based Effluent Limit--A limit on the concentration of an effluent parameter that is intended to prevent pollution of the receiving water.